ISSN (print) 0093-4666 © 2012. Mycotaxon, Ltd. ISSN (online) 2154-8889

MYCOTAXON

http://dx.doi.org/10.5248/122.283

*Volume 122, pp. 283–285* *October–December 2012*

# New *Anthracoidea, Tilletia,* and *Ustilago* records for Turkey

Sanli Kabaktepe & Zeliha Bahcecioglu*

*Department of Biology, Faculty of Science and Art, Inonu University, TR 44280, Malatya, Turkey*

*Correspondence to: *zeliha.bahcecioglu@inonu.edu.tr*

Abstract — Three smut taxa, *Anthracoidea angulata* on *Carex hirta*, *Tilletia lolii* on *Lolium perenne*, and *Ustilago serpens* on *Elymus elongatus*, are reported for the first time from Turkey. The morphological and microscopical features of these fungi are described based on the collected materials.

Key words — Anatolia, Ardahan, Kars, *Ustilaginales*

## Introduction

The smut fungi (*Ustilaginales*) are parasites of cereals and other cultivated and natural plants, comprising more than 1400 species in approximately 70 genera (Vanky 1994).

In the last decade, reports of new records of smut fungi have greatly increased in Turkey, and 55 smut species in 9 genera have been determined for the country (Bahcecioglu & Yildiz 2005; Bahcecioglu et al. 2006; Bremer et. al. 1952; Kirbag 2003; Kabaktepe & Bahcecioglu 2006; Petrak 1953; Sahin & Tamer 1998; Sert et. al. 2004; Sert 2009). Further smut research is required, as this number is far less than the total number of potential host plants in Turkey.

This paper presents smut species collected from Kars and Ardahan provinces in northeast Turkey.

## Materials & methods

Specimens were collected during the field studies in 2006–09 from Kars and Ardahan Provinces in Turkey. The host specimens were prepared according to established herbarium techniques. Spores were scraped from dried host specimens and mounted in lactophenol. The preparations were examined with an Olympus CX31 light microscope and micrographs taken with a Olympus E–330 camera. Analysis LS Starter software was used to measure at least 30 spores for each spore state. Host names follow Davis (1965–85)

and Davis et al. (1988). Specimens are deposited in the Inonu University Herbarium (INU), Turkey. The smut species were identified using relevant literature (Mordue & Ainsworth 1984; Vanky 1994) concerning smut fungi in Europe.

## Taxonomy

***Anthracoidea angulata*** (Syd.) Boidol & Poelt, Ber. bayer. bot. Ges. 36: 23 (1963)

Sori in inflorescence. Spores, angular dark brown, 12–20 × 15–28 µm wall irregularly thickened, 1.5–5 µm, verruculose.

A new smut species for Turkey, *A. angulata* is also known on *Carex hirta* from Europe and on *C. melanostachya* Willd. from Asia.

Specimens examined – On *Carex hirta* L. (*Cyperaceae*). **TURKEY**: **Kars**, 10 km from Sarikamis to Horosan, 2010 m, 22.09.2006, Sanli Kabaktepe 4653 (INU 8549); **Ardahan**, Yalnizcam mountains, Bilbilan plateau, 2400 m, 18.07.2007, Sanli Kabaktepe 5422 (INU 8550).

***Tilletia lolii*** Auersw. ex G. Winter, Rabenh. Krypt.-Fl. Ed. 2, 1(1): 109 (1881)

Sori in ovaries, covered by epidermis. Spores, globose to subglobose, 16–24 µm, light brown, wall reticulate, reticulations 2–5 µm wide 1.5–4 µm deep. Sterile cells, few, globose, subglobose, 10–20 µm, hyaline, wall 1–2 µm.

New for Turkey, *T. lolii* is also known from Asia, Europe, and New Zealand.

Specimens examined – On *Lolium perenne* L. (*Poaceae*). **TURKEY**: **Ardahan**, Posof, 2–4 km east of Kursuncavus village, 1720 m, 28.08.2008, Sanli Kabaktepe 6544 (INU 8552).

***Ustilago serpens*** (P. Karst.) B. Lindeb., Symb. bot. upsal. 16(2): 133 (1959)

Sori in leaves, covered with epidermis. Spores globose, ellipsoidal 11–20 µm, dark brown, wall 0.5–1 µm, verruculose.

New for Turkey, *U. serpens* is also known from Europe, Asia, North America, and New Zealand.

Specimen examined – On *Elymus elongatus* (Host) Runemark (*Poaceae*). **TURKEY**: **Kars**, 13 km from Kagizman to Kars, 1350 m, 11.06.2007, Sanli Kabaktepe 4918 (INU 8551).

### Acknowledgments

We are indebted to TUBITAK (Project no. TBAG-106T260) for financial support. We also thank Dr. Bayram Yıldız and Dr. Mehmet Candan for presubmission expert reviews

### Literature cited

Bahcecioglu Z, Yildiz B. 2005. A study on the microfungi of Sivas Province. Turkish J. Bot. 29: 23–44.

Bahcecioglu Z, Kabaktepe S, Yildiz B. 2006. Microfungi isolated from plants in Kahramanmaras Province, Turkey. Turkish J. Bot. 30: 419–434.

Bremer H, Karel G, Bıyıkoglu K, Goksel N, Petrak, F. 1952. Beiträge zur Kenntnis der parasitischen Pilze der Turkei V. Revue de la Faculte des Sciences de I Universite d İstanbul, Seri B. 17(2): 161–181.

Davis PH. 1965–85. Flora of Turkey and East Aegean Islands, Vols 1–9. Edinburgh University Press, Edinburgh.

Davis PH, Mill RR, Tan K. (eds). 1988. Flora of Turkey and the East Aegean Islands, Vol. 10(supplement). Edinburgh University Press, Edinburgh.

Kabaktepe S, Bahcecioglu Z. 2006. Microfungi identified from the flora of Ordu Province in Turkey. Turkish J. Bot. 30: 251–265.

Kirbag S. 2003. Two new records for the mycoflora of Turkey. Turkish J. Bot. 27(2): 153–154.

Mordue JEM, Ainsworth GC. 1984. *Ustilaginales* of the British Isles. London, Commonwealth Mycological Institute.

Petrak F. 1953. Neue Beiträge zur Pilzflora der Türkei. Sydowia 7: 14—15.

Sahin N, Tamer AU. 1998. Smut species determined in Turkey. J. Turk. Phytopath. 27(2–3): 151–156.

Sert HB. 2009. Additions to rust and smut fungi of Turkey. Phytoparasitica 37: 189–192. http://dx.doi.org/10.1007/s12600-009-0023-x

Sert HB, Sumbul H, Isiloglu M. 2004. Phytopathogenic fungi new for Southern Anatolia, Turkey. Phytoparasitica 32(4): 402–408.

Vanky 1994. European smut fungi. New York, NY USA, Gustav Fischer.